



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of RIGNEY et al.)

Serial No. 10/086,148)

Filed: October 22, 2001)

For: METHOD FOR REPLACING DAMAGED TBC CERAMIC LAYER)

Group Art Unit: 3726

Examiner: Irene Cuda-Rosenbaum

RESPONSE TO THE OFFICE ACTION

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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JUL 08 2003
TECHNOLOGY CENTER R3700

REMARKS

This response is submitted in response to the Examiner's action dated March 3, 2003. A one-month extension of time is included with this response. Claims 1-27 are pending in the present application. Claims 1-27 are rejected as being unpatentable under 35 U.S.C. §103(a).

The present invention is directed to a process for localized repair of a turbine component, such as an airfoil, having a surface with a damaged thermal barrier coating (TBC) system. The repair is accomplished by first cleaning the damaged region of the component, texturing the exposed surface to produce a surface having an array of spaced grooves. These spaced grooves very specifically have a predetermined groove spacing, predetermined groove geometry, and predetermined wall angle. After this very specific surface preparation is provided, a replacement TBC is deposited over the prepared surface. More specifically, the parameters for the surface preparation are carefully controlled so as to produce a groove geometry wherein the grooves are spaced in a substantially parallel arrangement from about 1 mil to about 8 mils apart. Two sets of grooves may be provided at an angle, but the grooves in each set of grooves are substantially parallel to one another by this amount. ✓

Claims 1-27 are rejected under 35 U.S.C. §103(a). The Examiner states